

September 13, 2006 Response to Office Action  
In re Appln. of Schroeder et al.  
Application No. 10/660,379

Page 2/8

*AMENDMENTS TO THE CLAIMS*

This listing of claims replaces all prior versions, and listings, of claims in the application.

1. (Previously Presented) A chemical-mechanical polishing composition comprising:
  - (a) fumed silica particles,
  - (b) about  $5 \times 10^{-3}$  to about 10 mmoles/kg of at least one alkaline earth metal selected from the group consisting of calcium, strontium, barium, and mixtures thereof, based on the total weight of the polishing composition,
  - (c) about 1 to about 15 wt.% of an oxidizing agent, and
  - (d) a liquid carrier comprising water,wherein the polishing composition has a pH of about 7 to about 13.
2. (Original) The polishing composition of claim 1, wherein the polishing composition has a pH of about 8 to about 11.
3. (Original) The polishing composition of claim 2, wherein the fumed silica particles are present in the polishing composition in an amount of about 1 to about 10 wt.% based on the total weight of the polishing composition.
4. (Original) The polishing composition of claim 3, wherein the oxidizing agent is an inorganic or organic per-compound.
5. (Previously Presented) The polishing composition of claim 4, wherein the oxidizing agent is present in the polishing composition in an amount of about 1 to about 8 wt.% based on the total weight of the polishing composition.
6. (Previously Presented) The polishing composition of claim 4, wherein the oxidizing agent is present in the polishing composition in an amount of about 1 to about 5 wt.% based on the total weight of the polishing composition.

Cabot Microelectronics Corporation  
870 North Commons Drive  
Aurora, Illinois, 60504  
United States of America  
Tel. (630) 375-5465

September 13, 2006 Response to Office Action  
In re Appln. of Schroeder et al.  
Application No. 10/660,379

Page 3/8

7. (Original) The polishing composition of claim 4, wherein the polishing composition further comprises an inorganic acid selected from the group consisting of nitric acid, phosphoric acid, sulfuric acid, salts thereof, and combinations thereof.

8. (Original) The polishing composition of claim 4, wherein the polishing composition further comprises an organic acid selected from the group consisting of oxalic acid, malic acid, malonic acid, tartaric acid, acetic acid, lactic acid, propionic acid, phthalic acid, benzoic acid, citric acid, succinic acid, salts thereof, and combinations thereof.

9. (Previously Presented) The polishing composition of claim 8, wherein the polishing composition further comprises a corrosion inhibitor selected from the group consisting of 1,2,3-triazole, 1,2,4-triazole, benzotriazole, benzimidazole, benzothiazole, and mixtures thereof.

10. (Original) The polishing composition of claim 9, wherein the polishing composition further comprises a complexing or chelating agent.

11. (Original) The polishing composition of claim 1, wherein the alkaline earth metal is present in the polishing composition in a concentration of about  $5 \times 10^{-3}$  to about 7.5 mmoles/kg.

12. (Original) The polishing composition of claim 11, wherein the alkaline earth metal is present in the polishing composition in a concentration of about  $5 \times 10^{-3}$  to about 5 mmoles/kg.

13. (Original) The polishing composition of claim 12, wherein the alkaline earth metal is present in the polishing composition in a concentration of about  $5 \times 10^{-3}$  to about 3 mmoles/kg.

14. (Original) The polishing composition of claim 1, wherein the fumed silica particles are present in the polishing composition in an amount of about 0.1 to about 20 wt.% based on the total weight of the polishing composition.

Cabot Microelectronics Corporation  
870 North Commons Drive  
Aurora, Illinois, 60504  
United States of America  
Tel. (630) 375-5465

September 13, 2006 Response to Office Action  
In re Appln. of Schroeder et al.  
Application No. 10/660,379

Page 4/8

15. (Original) The polishing composition of claim 14, wherein the fumed silica particles are present in the polishing composition in an amount of about 1 to about 10 wt.% based on the total weight of the polishing composition.

16. (Original) The polishing composition of claim 1, wherein the oxidizing agent is an inorganic or organic per-compound.

17. (Previously Presented) The polishing composition of claim 1, wherein the oxidizing agent is present in the polishing composition in an amount of about 1 to about 8 wt.% based on the total weight of the polishing composition.

18. (Previously Presented) The polishing composition of claim 16, wherein the oxidizing agent is present in the polishing composition in an amount of about 1 to about 5 wt.% based on the total weight of the polishing composition.

19. (Original) The polishing composition of claim 1, wherein the polishing composition further comprises an acid, and the acid is an inorganic acid selected from the group consisting of nitric acid, phosphoric acid, sulfuric acid, salts thereof, and combinations thereof.

20. (Original) The polishing composition of claim 1, wherein the polishing composition further comprises an acid, and the acid is an organic acid selected from the group consisting of oxalic acid, malic acid, malonic acid, tartaric acid, acetic acid, lactic acid, propionic acid, phthalic acid, benzoic acid, citric acid, succinic acid, salts thereof, and combinations thereof.

21. (Previously Presented) A chemical-mechanical polishing composition comprising:

- (a) fumed silica particles,
- (b) about  $5 \times 10^{-3}$  to about 10 mmoles/kg of at least one alkaline earth metal selected from the group consisting of calcium, strontium, and mixtures thereof, based on the total weight of the polishing composition,
- (c) about 1 to about 15 wt.% of an oxidizing agent, and

Cabot Microelectronics Corporation  
870 North Commons Drive  
Aurora, Illinois, 60504  
United States of America  
Tel. (630) 375-5465

September 13, 2006 Response to Office Action  
In re Appln. of Schroeder et al.  
Application No. 10/660,379

Page 5/8

(d) a liquid carrier comprising water,  
wherein the polishing composition has a pH of about 7 to about 13.

22. (Original) The polishing composition of claim 21, wherein the polishing composition has a pH of about 8 to about 11.

23. (Original) The polishing composition of claim 22, wherein the fumed silica particles are present in the polishing composition in an amount of about 1 to about 10 wt.% based on the total weight of the polishing composition.

24. (Previously Presented) The polishing composition of claim 23, wherein the oxidizing agent is present in the polishing composition in an amount of about 1 to about 8 wt.% based on the total weight of the polishing composition.

25. (Previously Presented) The polishing composition of claim 23, wherein the oxidizing agent is an inorganic or organic per-compound.

26. (Previously Presented) The polishing composition of claim 25, wherein the oxidizing agent is present in the polishing composition in an amount of about 1 to about 8 wt.% based on the total weight of the polishing composition.

27. (Original) The polishing composition of claim 26, wherein the oxidizing agent is present in the polishing composition in an amount of about 1 to about 5 wt.% based on the total weight of the polishing composition.

28. (Original) The polishing composition of claim 25, wherein the polishing composition further comprises an inorganic acid selected from the group consisting of nitric acid, phosphoric acid, sulfuric acid, salts thereof, and combinations thereof.

29. (Original) The polishing composition of claim 25, wherein the polishing composition further comprises an organic acid selected from the group consisting of oxalic acid, malic acid, malonic acid, tartaric acid, acetic acid, lactic acid, propionic acid,

Cabot Microelectronics Corporation  
870 North Commons Drive  
Aurora, Illinois, 60504  
United States of America  
Tel. (630) 375-5465

September 13, 2006 Response to Office Action  
In re Appln. of Schroeder et al.  
Application No. 10/660,379

Page 6/8

phthalic acid, benzoic acid, citric acid, succinic acid, salts thereof, and combinations thereof.

30. (Previously Presented) The polishing composition of claim 29, wherein the polishing composition further comprises a corrosion inhibitor selected from the group consisting of 1,2,3-triazole, 1,2,4-triazole, benzotriazole, benzimidazole, benzothiazole, and mixtures thereof.

31. (Original) The polishing composition of claim 30, wherein the polishing composition further comprises a complexing or chelating agent.

32. (Original) The polishing composition of claim 21, wherein the alkaline earth metal is present in the polishing composition in a concentration of about  $5 \times 10^{-3}$  to about 7.5 mmoles/kg.

33. (Original) The polishing composition of claim 32, wherein the alkaline earth metal is present in the polishing composition in a concentration of about  $5 \times 10^{-3}$  to about 5 mmoles/kg.

34. (Original) The polishing composition of claim 33, wherein the alkaline earth metal is present in the polishing composition in a concentration of about  $5 \times 10^{-3}$  to about 3 mmoles/kg.

35. (Original) The polishing composition of claim 21, wherein the fumed silica particles are present in the polishing composition in an amount of about 0.1 to about 20 wt.% based on the total weight of the polishing composition.

36. (Original) The polishing composition of claim 35, wherein the fumed silica particles are present in the polishing composition in an amount of about 1 to about 10 wt.% based on the total weight of the polishing composition.

Cabot Microelectronics Corporation  
870 North Commons Drive  
Aurora, Illinois, 60504  
United States of America  
Tel. (630) 375-5465

September 13, 2006 Response to Office Action  
In re Appln. of Schroeder et al.  
Application No. 10/660,379

Page 7/8

37. (Previously Presented) The polishing composition of claim 21, wherein the oxidizing agent is present in the polishing composition in an amount of about 1 to about 8 wt.% based on the total weight of the polishing composition.

38. (Previously Presented) The polishing composition of claim 21, wherein the oxidizing agent is an inorganic or organic per-compound.

39. (Previously Presented) The polishing composition of claim 37, wherein the oxidizing agent is present in the polishing composition in an amount of about 1 to about 8 wt.% based on the total weight of the polishing composition.

40. (Original) The polishing composition of claim 39, wherein the oxidizing agent is present in the polishing composition in an amount of about 1 to about 5 wt.% based on the total weight of the polishing composition.

41. (Original) The polishing composition of claim 21, wherein the polishing composition further comprises an acid, and the acid is an inorganic acid selected from the group consisting of nitric acid, phosphoric acid, sulfuric acid, salts thereof, and combinations thereof.

42. (Original) The polishing composition of claim 21, wherein the polishing composition further comprises an acid, and the acid is an organic acid selected from the group consisting of oxalic acid, malic acid, malonic acid, tartaric acid, acetic acid, lactic acid, propionic acid, phthalic acid, benzoic acid, citric acid, succinic acid, salts thereof, and combinations thereof.

43. Through 98. (Canceled)

Cabot Microelectronics Corporation  
870 North Commons Drive  
Aurora, Illinois, 60504  
United States of America  
Tel. (630) 375-5465